

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF OHIO  
WESTERN DIVISION

CHARLES SUNNYCALB,

Plaintiff,

v.

Case No. 1:10-cv-192-HJW

CSX TRANSPORTATION, INC.,

Defendant.

ORDER

Pending is the defendant's "Motion in Limine" (doc. no. 38), which plaintiff opposes. The Court held a *Daubert* hearing on June 12, 2012, at which plaintiff's expert witness Dr. Barry Levy, M.D., and defendant's late-identified expert witness Dr. Laura Green, Ph.D., both testified. The parties requested, and were granted, leave to file additional briefs, which have now been filed (doc. nos. 64, 65, 70). Also pending is plaintiff's post-hearing "Motion to Strike Undisclosed Testimony of Dr. Green and to Exclude Dr. Green from Trial, or Alternatively, For Leave to

Produce a Rebuttal Expert Witness” (doc. no. 66), which defendant opposes in part. Having fully considered the record, including the motions, briefs, exhibits, testimony, oral argument, and applicable authority, the Court will deny the defendant’s motion in limine, grant in part and deny in part the plaintiff’s motion to strike Dr. Green’s hearing testimony and bar her trial testimony, and grant plaintiff’s request for leave to produce a rebuttal witness, for the following reasons:

I. Background and Procedural History

On April 2, 2007, Charles Sunnycalb (“plaintiff”) was working as an engineer for CSX Transportation Inc. (“defendant” or “CSX”) and was operating a locomotive in Ohio. The locomotive was equipped with a Microphor toilet with a “chlorinator” to treat waste that has been flushed into a holding tank. The chlorinator contains chlorine pellets that dissolve in the waste liquid.

The Material Safety Data Sheet (“MSDS”) for the active chemical in the chlorine pellets indicates it is “[c]orrosive to eyes, skin, and mucous membranes” and “[h]armful by inhalation and if swallowed” (doc. no. 42-4 at 1). For inhalation, the MSDS provides that the chemical is

“irritating to the nose, mouth, throat, and lungs . . . can result in shortness of breath, wheezing, choking, chest pain, and impairment of lung function” Id. For ingestion, the MSDS provides that “irritation . . . can occur to the entire gastrointestinal tract . . . characterized by nausea” Id. For eye contact, the chemical can cause “severe irritation.” The MSDS explains that “this product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract.” Id. The MSDS further indicates that “after spillage/leakage, hazardous concentrations in air may be found in local spill area and immediately downwind” and cautions “do not put water on this product as a gas evolution may occur.” Id.

When plaintiff boarded the locomotive, he noticed an odor (described as smelling like “wet rotting steel” or like a “dumpster”) and reported this to a railroad maintenance employee, who sprayed an enzyme solution in the toilet area and on the surrounding floor. After the train departed, plaintiff noticed the smell getting worse near Hamilton and Carlisle, Ohio, and that it was making him cough. When the train stopped, plaintiff went down into the toilet area in order to use the

toilet. He noticed that its water tank was cracked and that water had leaked onto the floor, which was corroded and had holes in it.<sup>1</sup> Plaintiff indicates that when he used the toilet, a blast of air blew up through the corroded floor and blew filthy water into his eyes and mouth. As the train then began to move, air came up through the holes in the floor and blew “mist” around the interior of the cab. Plaintiff developed a bad cough, burning eyes, and felt “nauseated” (doc. no. 42-2 at 1, “Employee’s Incident Report”).

Plaintiff’s symptoms persisted and he sought medical treatment from his physician, Dr. Shakkotai. He was referred to pulmonary specialist, Dr. Sunil Dama, M.D., who examined plaintiff, conducted various diagnostic tests, and subsequently diagnosed plaintiff with reactive airway dysfunction syndrome (“RADS,” described as “persistent asthma syndrome after high level irritant exposures”). This diagnosis was later confirmed by the results of a methacholine challenge test.

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<sup>1</sup>The subsequent “Locomotive Work Report” reflects that the toilet tank was “busted leaking out on the floor,” and the “CSX Inspection Report” indicates “holding tank bad. Toilet room floor rusted” (doc. no. 42, Exs. E, F). Although CSX thereafter disposed of the tank, the fact that it was “busted” and leaking is not disputed.

On March 26, 2010, plaintiff filed this lawsuit against defendant CSX pursuant to the Federal Employers' Liability Act ("FELA") 45 U.S.C. § 51 et seq., for the injuries he sustained in this incident. CSK concedes that plaintiff has the condition RADS, but disputes whether his chemical exposure in this incident caused it. For the purpose of proving causation of his injuries, plaintiff timely disclosed that he intends to introduce at trial the opinions and testimony of his treating pulmonologist Dr. Sunil Dama, M.D., and his retained expert witness Dr. Barry Levy, M.D. Defendant CSX timely disclosed its own retained expert, pulmonologist Dr. James Lockey, M.D.

Shortly before the scheduled trial date in March 2012, CSX challenged the opinions of Drs. Dama and Levy and sought to exclude their testimony (doc. no. 38). The Court scheduled a *Daubert* hearing. Meanwhile, in light of a sudden out-of-state job interview offered to plaintiff by CSX, plaintiff requested (and was granted) a trial continuance. Trial was rescheduled for August 27, 2012.

CSX then sought leave to introduce the opinion of a late-identified second expert witness, toxicologist Dr. Laura Green, Ph.D. (doc. no. 44).

Plaintiff moved to exclude Dr. Green's report and testimony (doc. no. 47). This Court allowed Dr. Green to testify at the *Daubert* hearing, subject to a financial sanction upon defendant for its late identification (doc. no. 54 "Order of May 25, 2012"). The Court reserved any decision as to whether Dr. Green would be allowed to testify at trial. At the hearing, the parties requested, and were granted permission to file additional briefs (doc. nos. 64, 65, 70).

Plaintiff filed a post-hearing motion to strike Dr. Green's hearing testimony and bar her from testifying at trial, and alternatively, for permission to produce a rebuttal expert witness at trial (doc. no. 66). Defendant CSX opposes the motion, except as to plaintiff's alternative request for permission to produce a rebuttal witness (doc. no. 69). These matters are fully briefed and ripe for consideration.

## II. Issues Presented

The main issues before this Court are: 1) whether the causation opinions of plaintiff's two experts, Dr. Barry Levy, M.D., and treating pulmonologist Dr. Sunil Dama, M.D., pass scrutiny under *Daubert* and may be introduced at trial; 2) whether all or part of the hearing

testimony of CSX's late-identified expert witness, Dr. Laura Green, Ph.D., should be stricken; 3) whether Dr. Green may testify at trial; and 4) whether plaintiff may produce a rebuttal witness.

### III. Discussion

#### A. Relevant Law

FELA provides for liability when an injury results "in whole or in part" from the negligence of the employer. 45 U.S.C. § 51, et seq.; Rogers v. Missouri Pacific Railroad Co., 352 U.S. 500, 506 (1957) ("Under this statute the test of a jury case is simply whether the proofs justify with reason the conclusion that employer negligence played any part, even the slightest, in producing the injury or death for which damages are sought"); Daughenbaugh v. Bethlehem Steel Corp., 891 F.2d 1199, 1204 (6th Cir. 1989) (same).

A plaintiff must show a causal connection between the defendant's negligence and plaintiff's injuries. Mayhew v. Bell S.S. Co., 917 F.2d 961, 963-64 (6th Cir. 1990). In chemical exposures cases (i.e. "toxic torts"), a plaintiff must show that the chemical exposure could cause a particular type of injury (general causation) and actually did

cause plaintiff's own injury (specific causation). See Best v. Lowe's Home Centers, Inc., 563 F.3d 171, 181 (6th Cir. 2009); Pluck v. BP Oil Pipeline Co., 640 F.3d 671, 676-77 (6th Cir. 2011).

B. Whether the Plaintiff's Expert Witness Opinions are Admissible under Rule 702 and *Daubert*

Rule 702 of the Federal Rule of Evidence provides that:

If scientific, technical, or other specialized knowledge will assist the trier of fact to . . . determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Fed.R.Evid. 702. District courts have a "gatekeeping role" in screening the use of expert testimony, and trial judges have discretion to determine whether such testimony is admissible, based on whether it is both relevant and reliable. Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 589-597 (1993); Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 147 (1999); Newell Rubbermaid, Inc. v. The Raymond Corp., 676 F.3d

521, 527 (6th Cir. 2012). Courts have “broad latitude” in making this determination. Kumho, 526 U.S. at 138. The inquiry is “a flexible one,” and “[t]he focus . . . must be solely on principles and methodology, not on the conclusions they generate.” Daubert, 509 U.S. at 594–95. Reliability is determined by assessing “whether the reasoning or methodology underlying the testimony is scientifically valid,” whereas relevance depends upon “whether [that] reasoning or methodology properly can be applied to the facts in issue.” Id. at 592–593. “[T]he gatekeeping inquiry must be tied to the facts of a particular case, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony.” Kumho, 526 U.S. at 150.

In its motion in limine, CSX argues that “plaintiff has not offered proof that the chlorine allegedly present in the locomotive toilet was of such a quantity and concentration so as to be able to cause RADS” (doc. no. 38 at 5–6). CSX argues that because the opinions of plaintiff’s experts are not based on a precisely-measured level of plaintiff’s chemical exposure, they lack “the proper factual foundation” and are “unreliable and inadmissible.” CSX argues that absent a determination

of the plaintiff's level of chemical exposure, Dr. Dama's "specific causation opinion fails" and "the testimony of general causation by Dr. Levy is irrelevant" (Id. at 6).

In making this argument, CSX relies heavily on Pluck v. BP Oil Pipeline Co., 640 F.3d 671 (6th Cir. 2011), for the proposition that the level of chemical exposure must first be ascertained before offering a causation opinion. Such case is readily distinguishable on its facts, and CSX's reliance on such case is misplaced. Pluck had developed non-Hodgkins lymphoma after long-term exposure (approximately nine years) to a relatively low level of benzene in well water contaminated by a leaking BP pipeline. The plaintiff's expert had indicated that plaintiff's exposure was "greater than background" and that there was "no safe level for benzene in terms of causing cancer." At deposition, Pluck's expert conceded that plaintiff had been exposed to other sources of benzene, such as solvents and her extensive smoking habit. The defendant pointed out that Pluck's lymphoma may have been attributable to other environmental factors and that the levels of benzene in the well never exceeded the maximum permissible

contaminant level of 5 ppb designated by the EPA. Under those circumstances, the court found that the expert's opinion that benzene from the contaminated well had caused Pluck's lymphoma was not sufficiently "reliable" for purposes of Rule 702 and *Daubert*. The Court of Appeals for the Sixth Circuit affirmed, observing that Pluck's physician had not "ruled out" other causes of plaintiff's illness using the standard differential diagnosis method.

Unlike Pluck v. BP Oil, which involved measurable long-term low-level environmental exposure to a chemical that was also present from other sources, the present case involves a sudden chemical exposure from a single source resulting in immediate symptoms. Plaintiff had no prior diagnosis of asthma. His chemical exposure was unexpected and could not be measured after-the-fact, as it occurred suddenly in a situation where the level of that chemical is not ordinarily monitored and where any chlorine from the pellets would quickly disperse, making measurement impossible.

In such circumstances, this circuit and others have held that evidence of the precise level of chemical exposure is not necessary for

an expert to reliably indicate that the sudden exposure caused a plaintiff's illness. See Best v. Lowe's Home Centers, Inc., 563 F.3d 171, 178 (6th Cir. 2009); Hardyman v. Norfolk & Western Ry. Co., 243 F.3d 255, 260 (6th Cir. 2000); Gass v. Marriott Hotel Services, 558 F.3d 419, 434 (6th Cir. 2009); Westberry v. Gislaved Gummi AB, 178 F.3d 257, 263 (4th Cir. 1999); Heller v. Shaw Industries, Inc., 167 F.3d 146, 154 (3rd Cir. 1999). Plaintiff cites numerous cases for this (doc. no. 42 at 6-9), including cases specifically involving the condition RADS. See, e.g., Noffsinger v. Valspar Corp., Slip Opinion, 2012 WL 895496, \*1-2 (N.D.Ill. ) (truck driver developed the condition RADS after breathing fumes from leaking 55-gallon drums of Dynamprime paint, a solvent-based coating).

The decision by the Sixth Circuit Court of Appeals in the Best case is especially pertinent. There, an unknown quantity of pool chemicals in a punctured container splashed onto plaintiff's face. Best, 563 at 176. He suffered irritation and burning of his skin, nasal passages, and mouth, dizziness, and shortness of breath. He eventually lost his sense of smell completely. His physician conducted a thorough differential diagnosis in which he "ruled in" various possible causes of plaintiff's condition and then reliably "ruled out" these causes. He reviewed the

MSDS sheet for the active ingredients in the product, which indicated "harmful if inhaled." Although Best's physician could not determine the precise level of chemical exposure, he could reliably form the opinion that the inhalation of the chemical had caused his patient to lose his sense of smell, based on the sudden chemical exposure and immediate onset of symptoms, and given that the physician had carefully considered and ruled out other possible causes. Best, 563 at 176. The Sixth Circuit Court of Appeals reversed the trial court's decision to exclude the physician's causation opinion.

Like the physician in Best, Drs. Dama and Levy both used the well-accepted method of differential diagnosis. Differential diagnosis is "a standard scientific technique of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated." Pluck, 640 F.3d at 671. "There is nothing controversial about that methodology." Myers v. Illinois Central R. Co., 629 F.3d 639, 674 (7th Cir. 2010). Federal courts long have recognized this as an appropriate method for making a determination of causation of a person's illness. Glaser v. Thompson Med. Co., 32 F.3d 969, 977 (6th Cir.

1994) (recognizing the admissibility of properly developed differential diagnosis opinions); Hardyman, 243 F.3d at 260-61. “Many courts, including our own, allow experts to employ a rule-in/rule-out reasoning process for etiology as well as diagnosis.” Tamraz v. Lincoln Elec. Co., 620 F.3d 665, 673-74 (6th Cir. 2010), cert. denied, 131 S.Ct. 2454 (2011). “This circuit has long accepted this kind of testimony. Id. The case law has used the term “differential diagnosis” broadly to include “differential etiology.” Id.; Hardyman, 243 F.3d at 259 n. 2; English Dictionary 427 (2d ed.1989) (defining “etiology” as the study of causation). Federal courts have broadly used the term differential diagnosis to include differential etiology and have recognized this as an appropriate method of determining causation. Best, 563 F.3d at 178-79; Hardyman, 243 F.3d at 260-67; Glaser, 32 F.3d at 977.

The physician considers all relevant potential causes of the symptoms and then eliminates alternative causes based on a physical examination, clinical tests, and a thorough case history.” Hardyman, 243 F.3d at 260 (quoting Federal Judicial Center, Reference Manual on Scientific Evidence 214 (1994)); Best, 563 at 179. Courts should ask: (1)

Did the expert make an accurate diagnosis of the nature of the disease? (2) Did the expert reliably rule in the possible causes of it? (3) Did the expert reliably rule out the rejected causes? Tamraz, 620 F.3d at 673-74; Best, 563 F.3d at 179.

In the present case, with respect to general causation, plaintiff's expert, Dr. Barry Levy, M.D., reviewed a tremendous amount of relevant medical and scientific literature pertaining to RADS and related conditions, including the MSDS specification sheet that warns about breathing problems and lung damage, and concluded that exposure to a sufficient amount of chlorine can cause "RADS." Notably, the defendant's own experts, pulmonologist Dr. James Lockey, M.D., and toxicologist Dr. Laura Green Ph.D., also both agree that exposure to chlorine in sufficient quantity can cause RADS (Lockey Dep. at 51; Green Dep. at 42; Green Report, doc. no. 47-1 at ¶ 20). The requirement of general causation as an aspect of a scientifically-reliable causation opinion is the key point of *Daubert*. General Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997).

Although CSX argues that there is "no evidence" that the chlorine

was of sufficient quantity and concentration to cause the condition of RADS, the case law does not require a determination of the precise level of exposure in sudden accident situations. Moreover, the evidence reflects that the train's toilet system had a chlorinator, that the toilet system was leaking, that the liquid was sprayed into plaintiff's face and "misted" in the cabin air, that the MSDS sheet specifically warns that exposure to the active chemicals in the chlorinator pellets can cause breathing difficulties and lung damage, and that plaintiff -- who did not have a history of asthma -- immediately developed the symptoms of RADS after the sudden exposure in the incident at issue.

The medical documentation and deposition testimony reflect that Dr. Dama physically examined plaintiff and conducted various diagnostic tests before determining that plaintiff suffered from "RADS" due to his workplace chemical exposure. For example, Dr. Dama performed a bronchoscopy which revealed that plaintiff's lungs were red-colored, indicating inflammation of the lung tissue (Dama Dep. at 23-24). He ordered cultures taken in order to rule out bacterial or viral infection as a cause of the inflammation. Dr. Dama also performed a

cardiac work-up and ordered a CT scan for plaintiff. Id. at 24-26. Based on the results of all these tests and procedures, Dr. Dama ruled out various possible causes of plaintiff's symptoms, including ordinary asthma, heart failure, reflux, and rare diseases of the lung that can cause wheezing. Id. at 52-53. Given strong temporal relation (i.e., immediate symptoms after a sudden chemical exposure) and given that Dr. Dama ruled out other possible causes of plaintiff's symptoms, Dr. Dama's methodology passes muster under Daubert.

Similarly, plaintiff's expert witness Dr. Barry Levy, M.D., reviewed an enormous amount of relevant information, including the plaintiff's case file (including the MSDS sheet), plaintiff's medical records diagnostic test results, and the scientific literature and medical studies on RADS and related asthmatic conditions. Like Dr. Dama, he used the accepted method of "differential diagnosis and/or etiology" to rule in all possible causes of plaintiff's symptoms and then systematically rule out various causes based on the diagnostic test results and other data. Plaintiff has fully described Dr. Levy's methodology at length (doc. no. 70 at 2-6). Given the plaintiff's history of a reported sudden exposure to

chemical inhalation and/or liquid irritant, his cluster of symptoms (including breathing difficulties, nausea, and eye irritation), and the results of various diagnostic tests, Dr. Levy concluded that plaintiff was suffering from “RADS” caused by his workplace chemical exposure.

Drs. Dama and Levy have both concluded that plaintiff’s workplace exposure to chemicals in the liquid and/or vapor (“mist”) from the leaking toilet system caused plaintiff to develop RADS. These opinions are premised on differential diagnosis and/or etiology, as well as a strong temporal relationship between the locomotive incident and the onset of plaintiff’s symptoms. The opinions of Drs. Dama and Levy involved thorough and independent analysis of plaintiff’s symptoms, the possible causes, the results of various diagnostic tests, and the most likely explanation for his illness. Although CSX criticizes aspects of their opinions, their methodology satisfies the requirements of *Daubert*. Any alleged weaknesses in the experts’ methodology will affect the weight that such opinions are given at trial, but not their threshold admissibility. Best, 563 F.3d at 182. The doctors’ opinions will properly be subject to cross-examination at trial.

C. Whether the Defendant's Late-Identified Expert Witness Dr. Green May Testify at Trial

In its prior Order, this Court allowed the defendant's late-identified witness, Dr. Laura Green, Ph.D., to testify at the *Daubert* hearing, subject to an appropriate sanction of resulting costs for the extra discovery expenses incurred by plaintiff. At the *Daubert* hearing, Dr. Green's testimony largely pertained to Dr. Levy's methodology and was presented in an effort to challenge Dr. Levy's expert opinion on causation. In its prior Order, this Court reserved decision as to whether Dr. Green would be permitted to testify at trial.

The Court now decides this remaining question and concludes that Dr. Green may testify at trial, subject to the restriction that her testimony must be limited to matters within her expertise, i.e. general causation, rather than actual diagnosis of a patient's illness. While Dr. Green is highly trained as a toxicologist, plaintiff correctly points out that she is not a physician and admittedly may not diagnose a patient's illness. "[A] district court judge asked to admit scientific evidence must determine whether the evidence is genuinely scientific, as distinct from

being . . . speculation offered by a genuine scientist.” Tamraz, 620 F.3d at 677 (quoting Rosen v. Ciba-Geigy Corp., 78 F.3d 316, 318 (7th Cir. 1996)); see also, Cooley v. Lincoln Elec. Co., 693 F.Supp.2d 767, 773 (N.D. Ohio 2010) (excluding testimony of defense expert toxicologist in case involving employees injured by inhaling toxic manganese fumes). Courts view with special caution expert testimony prepared solely for purposes of litigation, rather than flowing from an expert's line of scientific or technical work. In re Aredia and Zometa Prods. Liability Litig., 2012 WL 2016249, \*7 (6th Cir. (Tenn.)) (citing Johnson v. Manitowoc Boom Trucks, Inc., 484 F.3d 426, 434-35 (6th Cir. 2007)).

While Dr. Green, based on her training and education, could properly indicate in her report that exposure to chlorine in sufficient quantity can cause RADS (doc. no. 47-1 at ¶ 20), other parts of her report were speculative and ventured into subjects upon which she was not qualified to render an opinion, i.e. specific causation (see, e.g., ¶ 22 speculating that plaintiff “may have been coming down with influenza”). At the hearing, defense counsel elicited testimony from Dr. Green about plaintiff’s RADS diagnosis and inquired about records indicating that

plaintiff had experienced gastro-intestinal complaints (i.e. nausea and “feeling ill”) after the incident. Dr. Green again speculated that plaintiff may have been coming down with influenza. Dr. Green may not speculate about or diagnose the plaintiff’s illness, and such testimony does not suggest any deficiency in Dr. Dama’s differential diagnosis as plaintiff’s treating physician, since Dr. Dama reliably ruled out other causes of plaintiff’s symptoms. According to the MSDS, exposure to the active chemicals in the chlorine pellets may result in symptoms including gastrointestinal complaints (i.e. “severe abdominal pain, vomiting”), and plaintiff’s reported complaints of “nausea” and “feeling ill” are essentially consistent with this.

#### IV. Conclusion

Upon review of the record, and after carefully considering the testimony and argument at the *Daubert* hearing, the Court concludes that the testimony and/or opinions of both Dr. Dama and Dr. Levy are “reliable and relevant” under Rule 702 and *Daubert* and may be introduced at trial. Both physician-experts utilized the accepted and valid methodology of differential diagnosis and/or etiology in providing

their causation opinions that plaintiff's RADS was due to sudden workplace chemical exposure. Their opinions are based on sufficient facts and data, used reliable principles and methods, and applied those principles and methods reliably to the facts of plaintiff's case. Their testimony will assist the trier-of-fact to determine relevant matters in this case.

The defendant's late-identified expert witness, Dr. Laura Green, Ph.D., testified at the *Daubert* hearing on matters beyond her expertise as a toxicologist, and this Court has already sustained various objections to such testimony. While Dr. Green will be permitted to testify at trial, her testimony will be limited to subjects within her expertise. In other words, she may testify only as to general causation, rather than any diagnosis (i.e. specific causation) of plaintiff's RADS. Plaintiff may produce a rebuttal witness.

Accordingly, the defendant's "Motion in Limine" (doc. no. 38) is DENIED; the plaintiff's "Motion to Strike" is GRANTED insofar as Dr. Green's hearing testimony as to specific causation shall be stricken,

but DENIED to the extent that Dr. Green may testify at trial; and plaintiff's alternative request to produce a rebuttal witness is GRANTED.

IT IS SO ORDERED.

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s/Herman J. Weber  
Herman J. Weber, Senior Judge  
United States District Court